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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/289,580	04/12/1999	KAZUHISA MURATA	6141963	8807

21171 7590 10/23/2002

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EXAMINER

PAYNE, DAVID C

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 10/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/289,580

Applicant(s)

MURATA, KAZUHIKA

Examiner

David C. Payne

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 21 - 29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 21 - 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 2633

DETAILED ACTION

1. Applicant's election with traverse of Species 1 – Figure 2 in Paper No. 9 is acknowledged.

The traversal is on the ground(s) that Species 1 (claims 1, 21 - 27) are generic to all pending claims. This is not found persuasive because e.g., Figure 2 illustrates a phase alignment (6) element that is not generic to all claims.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 2 – 20, withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

3. The drawings are objected to because figures 1, 2, 5, and 7 – 13 contain blank boxes which are not widely recognized engineering symbols. Applicant is required to supply a suitable legend for all such elements. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

Art Unit: 2633

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 21, 23, 24, and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Claims 21, 23, 24, and 26 are recites the limitation "said first predetermined number of **further data**" in last clause of each claim respectively. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, and 21 – 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al. US 6,313,932 B1 (Roberts) in view of Alexander et al. US 5,784,184 (Alexander).

Regarding claim 1 Roberts disclosed,

An optical transmission system, comprising a transmitting-end optical transmission device, a receiving-end optical transmission device (**figure 1**),

the transmitting-end optical transmission device comprising:

encoding means (**figure 1 (11)**), having n outputs, for forming k data by aligning phases (e.g., **figure 5 (56)**) of data on k channels with each other and for generating (n-k) error correction

Art Unit: 2633

bits (**n**, bits) for said **k** data and adding said (n-k) error correction bits to said **k** data, and wavelength-combining means (**figure 3 (6)**), connected to the encoding means, for converting both said **k** data and said (n-k) error correction bits, and the receiving-end optical transmission device comprising: wavelength-splitting means (**figure 3 (7)**), for separating the wavelength-multiplexed optical signals from the optical transmission line, and decoding means (**figure 1 (81)** e.g., ll: 5/ 50 - 55) connected to the wavelength-splitting means, for generating **k** error corrected data by correcting error bits using the (n-k) error correction bits.

Roberts disclosed a splitting and combining means rather than a multiplexing/demultiplexing means that sends signals through free space rather than fiber. Alexander disclosed a multiplexing/demultiplexing means (**figure 1 (mux, demux)**) with a FEC (**figure 2 (45)**) that operates via fiber (**figure 1 (70)**). It would have been obvious to one of ordinary skill in the art at the time of invention use a separate error encoder across each channel (as in Alexander) or one error coder over all the channels as in Roberts, such that it would be obvious to substitute multiplexing for combining signals and sending signals via fiber vs. free space. The encoding mechanism can be greatly simplified by operating over one channel than over all WDM channels at once and fiber communications is well known to provide a less noisy medium of transmission than free space.

Regarding claim 21 - 29,

An optical transmission system comprising a transmitting end optical transmission device, a receiving end optical transmission device, the transmitting end optical transmission device comprising:

data generating means (generator) (**figure 1 (8)**) for aligning phases of a first predetermined number of data on corresponding number of channels and for adding a second predetermined number of error correction bits to said first predetermined number of data, and

Art Unit: 2633

wavelength combining means (**figure 3 (6)**), connected to the data generating means, for converting both said first predetermined number of data and said second predetermined number of error correction bits to optical signals having different wavelengths and for wavelength multiplexing said optical signals so as to be delivered to the optical transmission line; and the receiving end optical transmission device comprising:

wavelength splitting means (**figure 3 (7)**) for separating the wavelength multiplexed optical signals from the optical transmission line into further optical signals, , and

data regenerating means (generator), (**figure 1 (8)**) connected to the wavelength multiplexing means, for generating said first predetermined number of data, error corrected by correcting said first predetermined number of further data contained in said further optical signals using said second predetermined number of error correction bits contained in said further optical signals. Roberts disclosed a splitting and combining means rather than a multiplexing/demultiplexing means that sends signals through free space rather than fiber. Alexander disclosed a multiplexing/demultiplexing means (**figure 1 (mux, demux)**) with a FEC (**figure 2 (45)**) that operates via fiber (**figure 1 (70)**). It would have been obvious to one of ordinary skill in the art at the time of invention use a separate error encoder across each channel (as in Alexander) or one error coder over all the channels as in Roberts, such that it would be obvious to substitute multiplexing for combining signals and sending signals via fiber vs. free space. The encoding mechanism can be greatly simplified by operating over one channel than over all WDM channels at once and fiber communications is well known to provide a less noisy medium of transmission than free space.

Conclusion

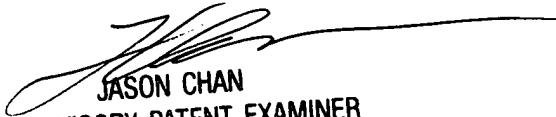
Art Unit: 2633

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Payne whose telephone number is (703) 306-0004. The examiner can normally be reached on M-F, 7a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703) 305-4729. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

dcp
October 21, 2002


JASON CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600